

North Platte, 34°, 93°. *Indian Territory*—Fort Sill, 50°, 96°. *Minnesota*—Breckenridge, 28°, 81°; St. Paul, 35°, 86°. *Dakota*—Olivet, 28°, 92°; Ft. Stephenson, 29°, 75°. *Colorado*—Pike's Peak, 10°, 41°; Denver, 37°, 90°. *New Mexico*—Santa Fe, 34°, 84°, La Mesilla, 42°, 101°. *Wyoming Territory*—Ft. Fred Steele, 25°, 85°; Ft. Fetterman, 30°, 87°. *Montana*—Virginia City, 26°, 72°. *Utah*—Salt Lake City, 35°, 84°. *Nevada*—Winnemucca, 26°, 77°; Pioche, 29°, 78°. *Idaho*—Boise City, 30°, 79°. *California*—Calistoga, 31°, 84°; Red Bluff, 31°, 96°; Los Angeles, 43°, 97°; Mammoth Tank, 64°, 108°; Cisco, 10°, 70°; Campo, 26°, 93°. *Oregon*—Roseburg, 34°, 82°. *Washington Territory*—Olympia, 35°, 76°. *Arizona*—Burkes, 60°, 105°; Grant, 44°, 94°.

*Ranges of Temperature.*—The monthly ranges will appear from an examination of the minima and maxima just given. The greatest daily ranges vary in New England from 19° at Wood's Holl to 36° at Boston; Middle Atlantic States, 22° at Cape May to 33° at Baltimore; South Atlantic States, 16° at Cape Hatteras to 29° at Wilmington and Augusta; Eastern Gulf States, 16° at Key West to 33° at St. Marks; Western Gulf States, 17° at Galveston to 47° at Uvalde; Ohio valley and Tennessee, 25° at Cairo to 38° at Pittsburgh; Lower Lake region, 28° at Erie to 39° at Sandusky; Upper Lake region, 27° at Escanaba to 38° at Chicago; Upper Mississippi valley, 29° at Davenport to 33° at St. Paul; Missouri valley, 27° at Omaha to 36° at Fort Stevenson; Red River of the North valley, 42° at Breckenridge and 40° at Pembina; Eastern Rocky Mountain slope, 27° at Denison to 47° at Uvalde and 38° at North Platte; Rocky Mountain stations, 21° at Pikes Peak, 36° at Virginia City to 48° at Fort Craig; Western Plateau, 31° at Boise City and 42° at Winnemucca; California, 19° at San Francisco to 37° at Los Angeles; Oregon, 34° at Portland and 35° at Roseburg and Olympia.

*Frost, injurious to vegetation*, is reported as follows: Gainesville, Ga., 3rd, killing cotton on low grounds Cornish, Me., killed brakes; 24th, killed young clover. Farmington, N. H., 27th, severe, killing all vegetation. Freehold, N. Y., 24th, injured beans. Palermo, N. Y., 23rd and 24th, severe, killing leaves on forest trees. Lenoir, N. C., 3rd, killing potato vine tops and tender grape vines. Litchfield, Ohio, 23rd, greatly damaging garden and fruit. Wytheville, Va., 3rd, 12 miles from here fruit trees badly frozen; 11th, near low grounds and water courses very severe; 31st, peach, cherry, apple, strawberry, pear destroyed in some places. Madison, Wis., 6th, injured early barley and vegetables. Grand Haven, Mich., 7th. Calistoga, Cal., 7th, killed grape vines, tomatoes, apricots; 22d, killed young orange shoots. Yreka, Cal., 27th, apple, peach, pear, cherry killed. Southington, Conn., 27th. Logan, Ia., 6th, hardest frost in May for 20 years, killed much fruit. Monticello, Ia., 6th. Dunbarton, N. H., 27.

*Ground Frozen.*—Rowe, Mass., 3rd, frozen, 7th, frost nearly out of ground.

*Ice.*—Severe frosts, causing formation of ice are reported as follows: Winnemucca, Nev., 19th, sleet; Dubuque, 6th; Detroit, 1st, 2nd; Pittsburgh, Pa., 3rd,  $\frac{1}{2}$  in.; Cape May, N. J., 24th, ice formed 5 miles from station; Rowe, Mass., 6th, on pond; Clear Creek, Neb., 6th,  $\frac{1}{16}$  in. thick; Waterburg, N. Y., 8th, 9th; Starkey, N. Y., 23rd,  $\frac{1}{2}$  in.; Nile, N. Y., 8th,  $\frac{1}{2}$  in., 22nd, 23rd, 24th, (27th,  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in.); Westerville, O., 1st, 2nd, 3rd, 8th; Norwalk, O., 1st,  $\frac{1}{2}$  in., 2nd, 3rd, 8th, 9th, 22nd, 23rd; Chamberburg, 3rd, 8th, 10th; Catawissa, Pa., 2nd, 3rd; Coleville, Mich., 3rd and 6th, 4 in. and 2 in. respectively; Snowville, Va., 3rd; Campo, Cal., 18th, 20th, 22th, 23th, 24th, very severe black frosts, ice  $\frac{1}{2}$  in. thick, and on 22nd  $\frac{1}{2}$  in. thick.

## PRECIPITATION.

The general distribution of the rain-fall, which includes melted snow, for the month is illustrated as accurately as possible by returns from about 650 stations upon chart No. III. In the lower left-hand corner of same will be found a table giving the average precipitation of *May* by districts. It has been below the average in all districts, except Nova Scotia, Tennessee, Minnesota and the Pacific States. Numerous cases of drought are reported, notice of which will be found under that special heading.

*Special Heavy Rains.*—5th, Decatur, Tex., 2.70 in., and Gatesville, Tex., 4.10 in 6 hours, with hail. 6th and 7th, Green Springs, Ala., 3.47 in. 7th, St. Augustine, Fla., 3.80 in. 11th and 12th, Cape Lookout, N. C., 2.97 in. 12th and 13th, Duluth, Minn., 2.70 in. 16th, Sandy Springs, Md., 4.28 in. 17th and 18th, Woodstock, Md., 4.35 in. 19th, Woodstock, Md. 2.00 in. in 52 minutes. 24th and 25th, Bloomfield, Wis., 3.50 in. 25th and 26th, Arlington, Ind., 4.75 in. 25th and 26th, Chicago, Ill., 2.52 in. 30th, Des Moines, 2.62 in. in 3 hrs. 3 min. 30th, Waterville, Kan., 4.00 in. 31st, Clear Creek, Neb., 3.22 in. in 25 hrs. 30 min. Numerous heavy rains occurred in connection with the local storms of the 29th, 30th and 31st.

*Largest Monthly Rainfalls.*—Concord, Iowa, 8.65 inches; Mesquite, Tex., 8.50 in., Duluth, Minn., 7.99 in.; Cape Lookout, N. C., 7.96 in.; Sandy Springs, Md., 7.97 in.; Fairfield, Iowa, 7.55 in.; St. Augustine, Fla., 7.36 in.; St. Paul, Minn., 7.18 in.; Woodstock, Md., 7.00 in.; Portland, Or., 6.60 in.; Brookhaven, 6.50 in.; Vicksburg, Miss., 5.95 in.; Davenport, Iowa, 5.83 in.; Cape Hatteras, N. C., 5.75 in.; Memphis, Tenn., and Omaha, Neb., 5.53 in.; Breckenridge, Minn., 5.42 in.; Key West, Fla., 5.11 in.; Deadwood, Dak., 5.03 in.; Wilmington, N. C., 5.06 in.

*Smallest Monthly Rainfalls.*—In southeastern California, Arizona and western New Mexico, as shown upon chart No. III, no rainfall is reported. San Diego, Cal., trace; Kit Carson, Col., 0.02 inches; Pioche, Nev., 0.03 in.; Brownsville, Tex., West Charlotte, Vt., and Mt. Sterling, Ill., 0.05 in.; Fort Union, N. M., 0.06 in.; Fort Griffin, N. M., 0.08 in.; Salt Lake City, Utah, 0.10 in.; Plattsburg Barracks, N. Y., 0.18 in.; Georgetown, Col., 0.20 in.; Los Angeles, Cal., 0.24 in.; Cape May N. J., and Vernon Centre, N. Y., 0.25

in.; Ft. Preble, Me., 0.26 in.; Burlington, Vt., 0.38 in.; Johnstown, Va., 0.50 in.; Montreal, Can., 0.76 in.; Augusta, Ga., 0.84 in.; Albany, N. Y., 0.89 in.

*Rainy Days.*—The number of days on which rain or snow has fallen is about as follows: New England, 5 to 14; Middle Atlantic States, 4 to 15; South Atlantic States, 9 to 17; East Gulf States, 4 to 11; Western Texas, 1 to 5; Tennessee and Ohio valley, 7 to 12; Lower Lakes, 8 to 14; Upper Lakes, 7 to 20; Upper Mississippi valley, 10 to 18; Missouri valley, 13 to 16; Red River of the North valley, 9 to 14; Eastern Rocky Mountain Slope, 3 to 8; Deadwood (Black Hills), 13; Rocky Mountains, 2 to 20; Pikes Peak, 6; Western Plateau, 1 to 10; California, 2 to 13; Oregon, 22 and 23; Arizona, 0.

*Cloudy Days.*—The number of days on which cloudiness averaged eight tenths is as follows: New England, from 1 to 13; Middle Atlantic States, 4 to 10; South Atlantic States, 3 to 19; Gulf States, 2 to 9; Ohio valley and Tennessee, 3 to 6; Lower Lakes, 3 to 7; Upper Lakes, 6 to 18; Upper Mississippi valley, 7 to 16; Missouri valley, 8 to 13; Red River of the North, 12 to 18; Eastern Rocky Mountain Slope, 0 to 4; Rocky Mountains, 1 to 11; Western Plateau, 2 to 8; California, 0 to 16; Oregon, 22 to 25; Arizona, 0 to 4.

*Hail.*—Red Bluff, Cal., 6th, 21st; Umatilla, Or., 6th; Castroville, Tex., 5th; Graham, Tex., 30th, stones weighing 1 oz.; Henrietta, Tex., 31st; Eagle Pass, Tex., 5th, 3 inches in circumference; Corsicana, Tex., 6th, 25th, 30 miles south of city, doing great damage to wheat, cotton, and corn crops, track  $1\frac{1}{2}$  miles wide, 8 miles long; St. Marks, Flo., 7th; Mobile, Alabama, 5th; Breckenridge, Minn., 10th; Des Moines, Ia., 29th, severe, stones size of walnuts; Burlington, Ia., 31st; Keokuk, Ia., 13th; St. Paul, Minn., 12th; La Cross, Wis., 11th; Milwaukee, Wis., 11th; Toledo, Ohio, 30th; Detroit, Mich., 30th, 31st; Morgantown, W. Va., 14th; Cincinnati, O., 13th, 26th; Indianapolis, Ind., 30th, 6 p. m.; Chattanooga, Tenn., 16th; Smithville, N. C., 17th; Thatchers Island, Mass., 21st; Fort Wallace, Kas., 16th; Fort Sidney, Neb., 21st, 24th; Fort Union, N. M., 5th; Fort Duncan, Tex., 5th, stones very large; Calistoga, Cal., 18th; Olivet, Dak., 24th; Gulf Hammock, Fla., 7th; near Forsyth, Ga., 30th; Mt. Sterling, Ill., 3rd; Anna, Ill., 26th; Fort Wayne, Ind., 30th; St. Meinrad, Ind., 25th, 26th, destructive; Cresco, Io., 3rd, 10th, 11th; Fort Madison, Ia., 29th; Boonsboro, Ia., 29th; Holton, Kan., 19th; near Independence, 26th; Topeka, Kans., 19th, 25th, 29th; Manhattan, Kan., 29th, 30th; Gardner, Me., 1st; Orono, Me., 1st; Sandy Springs, Md., 16th; Emery Grove, Md., 15th; Grand Rapids, Mich., 30th; Thornville, Mich., 31st; Oregon, Mo., 12th, 30th; Plattsmouth, Neb., 19th; Ashley, Mo., 13th; Howard, Neb., 12th; Palermo, N. Y., 31st; Highlands, N. C., 27th, heavy; near Ringgold, Ohio, 19th; Bethel, O., 15th; Cincinnati, O., 13th, 26th; McMinnville, Tenn., 21st; Austin, Tenn., 7th; Snowville, Va., 29th, severe; West Charlotte, Vt., 3rd; Greenwood, Wis., heavy "stones  $2\frac{1}{2}$  in. by  $3\frac{1}{4}$  in. were formed;" Neillsville, Wis., 11th; Embarrass, Wis., 10th, 11th; Fort Concho, Tex., 30th; North Platte, Neb., 11th.

*Snow fell as follows:* Total monthly snowfall at Summit Station, Central Pacific R. R.,  $25\frac{1}{2}$  inches; Emigrant Gap 8 inches, and Truckee, 4 inches. Winnemucca, Nev., 18th, snow fell on surrounding hills; 29th, low down on foot hills. Denver, Col., 30th, on mountains. Santa Fé, N. M., 31st, on mountains. Colorado Springs, Col., 14th, on the Peak. Ft. Garland, Col., 31st. Georgetown, Col., snow-fall during month 40 inches. Deep Creek, Utah, 30th, on mountains. Pioche, Nev., 11th. Santa Fé, N. M., 11th, 31st. Pike's Peak, 11th, 12th (heavy), 29th. Ft. Sill, Ind. Ty., 30th. Marquette, Mich., 6th. Mt. Washington, N. H., 3rd, 4th, 5th. Eastport, Me., 24th.

*Depth of Snow on Ground at end of Month.*—Pike's Peak, Col., 38 inches; Red Bluff, Cal., snow still remains on summit of mountains; Georgetown, Col., 2 inches; Rowe, Mass., snow remains around edges of pond; Stratford, Vt., snow disappeared on the 20th.

*Droughts.*—Campo, Cal., driest and coldest May for 20 years; springs drying up. Belvidere, Ill., unprecedented drought from April 10th to May 24th. Gulf Hammock, Fla., 31st, crops suffering, especially corn and sugar-cane. Thomasville, Ga., a dry month. Vevay, Ind., 16th, vegetation suffering severely; ground cracking open in many places. Anna, Ill., severe drought has injured strawberries, oats, wheat, etc. Cresswell, Kan., 31st spring grain suffering, timothy grass dying. Gardiner, Me., May was a warm and dry month. Litchfield, Mich., wheat somewhat injured by dry weather. Somerset, Mass., 8th to 18th, vegetation suffering. Near Brookhaven, Miss., 17th, crops injured by drought in middle of month. Virginia City, Mont., the farmers of the Madison and Ruby valleys, 10 miles from Virginia City, report crops suffering from drought. Vineland, N. J., 21st to 31st. Vernon Centre, N. Y., 31st, grain of all kinds suffering very much. Catawissa, Penn., present month has been exceedingly dry, all vegetation has greatly suffered. North Lewisburg, Ohio, very dry month. Tarentum, Penn., dry month. Stratford, Vt., driest May for many years. Woodstock, Vt., 31st, very severe in latter part of month. Ft. Gibson, Ind. Ty., 25th to 29th, vegetation drying up, stock suffering. San Antonio, Tex., 28th. Corsicana, Tex., corn and cotton suffering. Indianola, Tex., crops and cattle suffering. Graham, Tex., vegetation suffering. Buffalo, N. Y., 13th. Chattanooga, Tenn., 26th, vegetation becoming parched. Nashville, Tenn., 11th, 12th, 13th. Keokuk, Iowa, advices from adjacent localities in Illinois state that wheat has suffered greatly from drought. West Charlotte, Vt., 31st, severe. Prof. Nipher, in the bulletin of the Missouri Weather Service for May, reported the eastern part of that State suffering greatly from lack of rain and small grain and fruit much injured. Prof. Kingston, in the Weather Review of the Canadian Meteorological Service, says "the months of April and May were, in the vicinity of Lake Ontario, the driest on record."

*Floods.*—No important river floods have been reported.